

Scientist-SE, Central National Herbarium, B.S.I., for kindly going through the manuscript.

| <i>C. griffithii</i> | <i>C. ghatakii</i> |
|---|---|
| Leaf : large (11.5-26.0 x 3-6 cm). | comparatively smaller (10-15 x 2.5-3 cm) |
| Inflorescence : longer (15-34 cm), 6-18-flowered. | shorter (12-14 cm), 6-8 flowered. |
| Flowers : 1.5-2 cm across, light brownish. | 1-1.5 cm across, greenish-yellow. |
| Sepals : larger (1.0-1.3 x 0.3-0.6 cm), 5-nerved. | smaller (0.6-0.7 x 3 cm), 3 nerved. |
| Petals : larger (10-13x1 mm). Lateral lobes of labellum rounded, keels 5. | smaller (6-7 x 0.5 mm).. Lateral lobes of labellum ovate-oblong, keels 2. |
| Column : narrowly winged. | broadly winged |

A NEW LEPIDOPTERAN *INDOCALA* GEN. NOV. FROM INDIA (OPHIDERINAE: NOCTUIDAE: LEPIDOPTERA)¹

H.S. ROSE AND A. SRIVASTAVA²
(With five text-figures)

Indocala gen. nov. has been proposed for the species *punjabensis* sp. nov. collected from Punjab (India). A brief account of the genitalia has been given along with adult description.

INTRODUCTION

While considering the taxonomy of eighty species of the subfamily Ophiderinae, collected between August 1984 and September 1987, a homogenous sample consisting of seven individuals of a species could not be identified from the relevant literature (Hampson 1894, 1902, 1912, 1924, 1926). The species, in fact, belongs to a group of genera such as *Calyptra* Ochseneimer, *Oraesia* Guenee, *Culasta* Moore and *Hypocala* Guenee. The examination of various morphological characters, especially the wing ve-

nation and genitalia, followed by their evaluation and comparison with the known genera indicated that the new species requires to be placed under a new genus. Accordingly a new genus *Indocala* is proposed for the new species *punjabensis*.

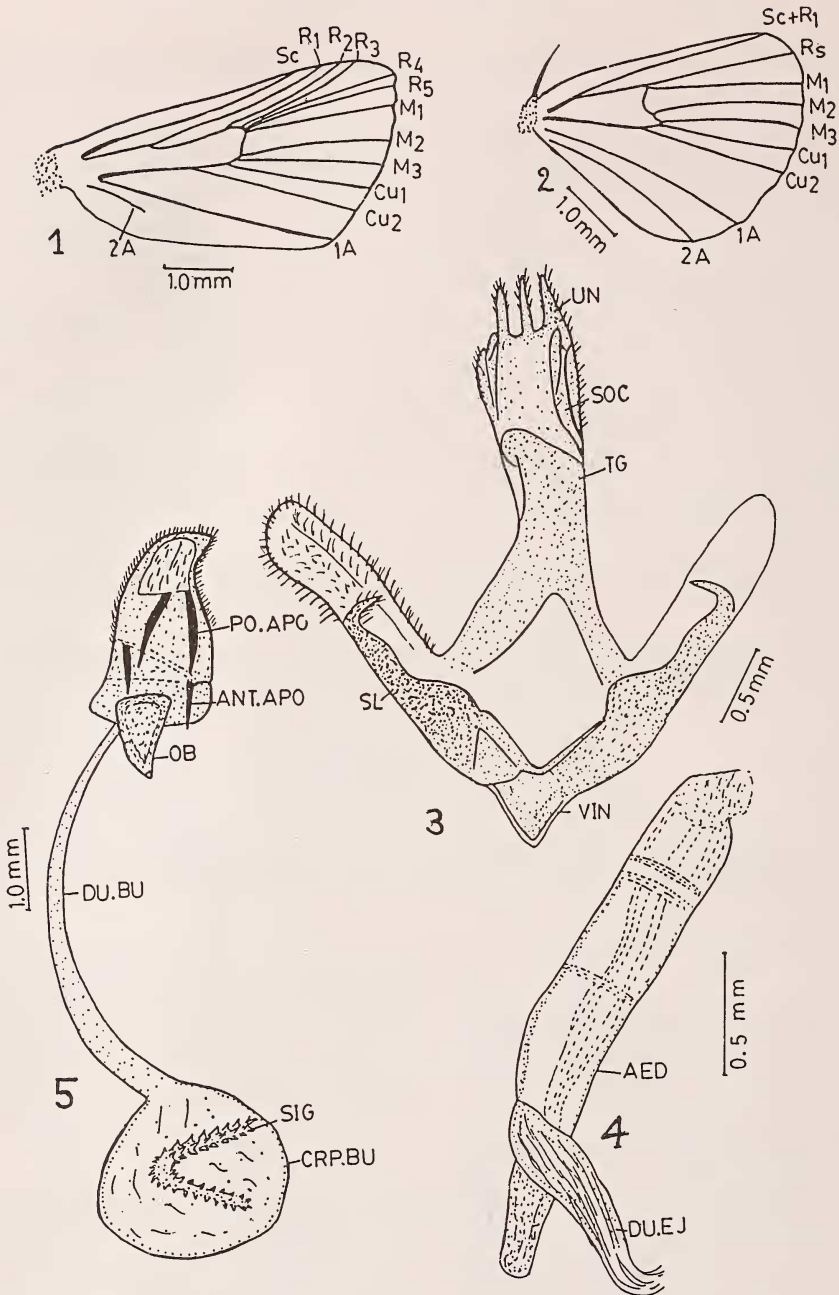
Genus *Indocala* n. gen. nov.

Type-species: *Indocala punjabensis* sp. nov.

Labial palpus porrect, triangularly scaled; antenna simple, minutely ciliated. Forewing without areole, discal cell more than half the length of wing, R₃ and R₄ not stalked. Hindwing with discal cell slightly more than one-third the length, R_s and M₁, and M₃ and Cu₁ connate before anterior and posterior angle respectively. Male genitalia with uncus trifold, socii present, valva with well developed saccular extension, harpe

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Figs. 1-5. *Indocala punjabensis* sp. nov.

1 & 2: Fore and hindwing; 3 & 4: Male genitalia; 5: Female genitalia.

Abbreviations: 1A. First anal vein; 2A. Second anal vein; AED. Aedeagus; ANT.APO. Anterior apophyses; CRP.BU. Corpus bursae; Cu₁. First cubital vein; Cu₂. Second cubital vein; DU.BU. Ductus bursae; DU.EJ. Ductus ejaculatorius; M₁. First median vein; M₂. Second median vein; M₃. Third median vein; OB. Ostium bursae; PO.APO. Posterior apophyses; R₁. First radial vein; R₂. Second radial vein; R₃. Third radial vein; R₄. Fourth radial vein; R₅. Fifth radial vein; RS. Radial sector; SL. Sacculus; SOC. Socii; TG. Tegumen; UN. Uncus; VIN. Vinculum.

wanting. Female genitalia with ostium region well developed, corpus bursae with a pair of signa present.

Indocala punjabensis sp. nov.

Adult: Head, thorax, tegula and patagium greyish; labial palpus porrect, triangularly scaled, brownish, third segment long, beak like; antenna simple, minutely ciliated; eyes naked, large, dark with rounded spots. Forewing with costal margin somewhat straight, apex more or less acute, outer margin uniform, cilia grey brown; inner margin straight, ground colour grey brown, irrorated with large number of dark spots; an indistinct double submarginal outwardly waved lines represented by dark specks; underside yellowish with pinkish tinge, postmedial and submarginal bands dark. Hindwing with costal margin straight, apex somewhat truncate, outer margin uniform, cilia yellowish with pink tinge, anal margin furnished with yellow-pinkish scales, ground colour dark fuscous with slight pinkish tinge, a distinct post-medial band, a pinkish elongate spot near anal angle; underside yellow with pink shade, a distinct half post-medial line, medial line indistinct represented by dark spots. Abdomen smoothly scaled, grey with reddish tinge. Legs clothed with reddish brown scales.

Venation: (Figs. 1 & 2). Forewing with discal cell more than half the length, R_1 from well before middle of cell, R_3 from just before anterior angle, R_4 and R_5 from anterior angle, M_1 from anterior angle, M_2 from a little above posterior angle, M_3 from posterior angle, Cu_1 from just before posterior angle, Cu_2 from two-third of cell. Hindwing with cell less than half the length of wing, R_5 and M_1 connate before anterior angle, M_2 from just above posterior angle, M_3 and Cu_1 connate, slightly before posterior angle, Cu_2 from three-fourth of cell.

Genitalia: (Male: Figs. 3,4). Uncus unique, trifid, uniformly sclerotised throughout, setosed; socii well developed, flap like, thin walled, finely setosed; tegumen well developed, uniformly sclerotised; vinculum narrow, V-shaped, sacculus well developed, with curved saccular extension;

transtilla simple, membranous, juxta not sclerotised, simple; aedeagus broad, rod-like, uniformly sclerotised throughout the length, vesica with dents, specific cornuti wanting.

Female: (Fig. 5): Ovipositor lobes well developed, sclerotised, setosed; posterior apophysis broader and longer than anterior apophysis; ostium bursae sclerotised, vorticella or somewhat V-shaped; ductus bursae thin walled, long, transparent tube like; corpus bursae globular, thin walled; signum present (two rod-like structures having attached to a large number of spines).

Wing expanse (half): Male and female : 16 mm.

Collection studied: Holotype: Male, Punjab: Punjabi University, Patiala, 24-7-1987. Allotype: Female, same data as holotype, 24-7-1987. Paratype : 4 Males, 27-7-1987, 1 Female, 29-7-1987, same data as above.

The species is distinct from other known Ophiderines in the absence of an areole in the forewing. The genitalia are also of different and possess unique modifications in respect of certain constituent parts. The uncus is exceptionally well developed and is represented by three finger-like processes besides a pair of flap-like socii. The saccular part of the valva is conspicuous because of the presence of a thumb-like saccular process. In addition to this a pair of signae is also present in the corpus bursae. The ostial region (ostium bursae) looks like a pouch and is shaped more or less like a vorticella. Hence, the new genus *Indocala* has been proposed for the species which has been named after Punjab state.

The new genus with its unique characters, is somewhat allied to genera such as *Hypocala* Guenee, *Calyptra* Ochseneimer, *Oraesia* Guenee and *Culasta* Moore, all having rostriform type of labial palpi. However, *Indocala* gen. nov. differs from its closest genus *Hypocala* on the basis of the veins R_3 and R_4 of the forewing, which are not stalked as in the former genus. Apart from this, in the male genitalia the harpe is wanting and saccus greatly reduced, whereas, socii are present in both the genera.

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AN UNDESCRIBED SPECIES OF *MUSSAENDA* L. (RUBIACEAE) FROM EASTERN HIMALAYA¹

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(with ten text-figures)

Mussaenda andersonii S.K. Basu et T.K. Paul typified by *Anderson*163 from Sikkim is established as a new species. The new species is described and illustrated.

While studying the material of *Mussaenda* L. (Rubiaceae) in CAL we came across some interesting specimens collected by Simons, Anderson, King and others during 1862-1876. These specimens are from Darjeeling, Sikkim Himalaya and had been given a manuscript name by King, but this name does not seem to have been published. Again King remarked on two of these specimens "Same as 6250G Wall. Cat." Further he also sought the opinion of C.B. Clarke on the identity of these specimens and quoted on the specimens "CBC says = *M. wallichii* G. Don". But *M. wallichii* G. Don as cited by J.D. Hooker (1880) in *Fl. Brit. India* is a plant with persistent calyx. G. Watt ignored Clarke's identification and wrote on one of the fruiting specimens (C.B. Clarke? 255), "Fl. Br. Ind. remarks regarding *wallichii* calyx teeth persistent". But he was silent about the identity of that fruiting specimen. jaya-

weera (1963) revised the genus *Mussaenda* L. of India and Sri Lanka but may not have examined these specimens preserved in CAL.

Our studies reveal that these specimens neither match with *M. wallichii* G. Don nor Wall. Cat. 6250 G, i.e., *M. glabrata* (Hook.f.) Hutch. ex Gamble, nor do they match with any other known species of the genus *Mussaenda* L. and in fact represent a hitherto unrecognised species. They are therefore described here as a new taxon.

Mussaenda andersonii sp. nov.

M. frondosae L. affinis, sed differt foliis sparsim pilosis, stipulis intus glabris, calycis lobis brevioribus (c. 3 mm longis), puberulisque, sepalis petaloideis glabrescentibus, corollaeque tubis brevioribus (1.9 cm longis).

Scandent shrub; young stem hirsute, older stems glabrate, blackish brown. Leaves opposite, elliptic, ovate to oblong, 4.6-11.2 x 2.1-6 cm, apex shortly acuminate or acute, base cuneate or rounded, upper surface sparsely hairy, sometimes hairs only along the veins and veinlets; primary lateral veins 6-8 pairs; petiole 0.5-1.0 cm

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